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Sequence Listing
<110> SAGAWA, Hiroaki et al.
<120> PROCESS FOR PRODUCING CYTOTOXIC LYMPHOCYTE
<130> 1422-0644PUS1
<140> US 10/509,055
<141> 2004-09-24
<150> PCT/JP03/03575
<151> 2003-03-25
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                 35
                                      40
Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu
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Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln
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His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr
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Gly Leu Asp Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala
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Asn Ser Phe Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr
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Gly Tyr Arg Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro
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                                      40
Arg Glu Asp Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr
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Asn Gly Arg Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr
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Thr Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg
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Tyr Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val
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Gln Glu Phe Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser
                 50
                                     55
Gly Leu Lys Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val
                 65
                                     70
Thr Gly Arg Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile
Asn Tyr Arg Thr
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Thr Ser Leu Ser Ala Gln Trp Thr Pro Pro Asn Val Gln Leu Thr
Gly Tyr Arg Val Arg Val Thr Pro Lys Glu Lys Thr Gly Pro Met
                 35
                                     40
Lys Glu Ile Asn Leu Ala Pro Asp Ser Ser Val Val Val Ser
                                     55
Gly Leu Met Val Ala Thr Lys Tyr Glu Val Ser Val Tyr Ala Leu
                 65
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Lys Asp Thr Leu Thr Ser Arg Pro Ala Gln Gly Val Val Thr Thr
Leu Glu
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Gly Phe Gln Val Asp Ala Val Pro Ala Asn Gly Gln Thr Pro Ile
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                                      40
Gln Arg Thr Ile Lys Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly
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Leu Gln Pro Gly Thr Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn
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Asn Ser Leu Leu Val Ser Trp Gln Pro Pro Arg Ala Arg Ile Thr
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Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly Ser Pro Pro Arg Glu
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                                      40
Val Val Pro Arg Pro Arg Pro Gly Val Thr Glu Ala Thr Ile Thr
                                      55
Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile Tyr Val Ile Ala Leu
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Lys Glu Ile Asn Leu Ala Pro Asp Ser Ser Ser Val Val Val Ser
Gly Leu Met Val Ala Thr Lys Tyr Glu Val Ser Val Tyr Ala Leu
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                                     70
Lys Asp Thr Leu Thr Ser Arg Pro Ala Gln Gly Val Val Thr Thr
                 80
                                     85
Leu Glu Asn Val Ser Pro Pro Arg Arg Ala Arg Val Thr Asp Ala
                 95
                                    100
Thr Glu Thr Thr Ile Thr Ile Ser Trp Arg Thr Lys Thr Glu Thr
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                                    115
Ile Thr Gly Phe Gln Val Asp Ala Val Pro Ala Asn Gly Gln Thr
Pro Ile Gln Arg Thr Ile Lys Pro Asp Val Arg Ser Tyr Thr Ile
                140
                                    145
Thr Gly Leu Gln Pro Gly Thr Asp Tyr Lys Ile Tyr Leu Tyr Thr
                155
                                    160
Leu Asn Asp Asn Ala Arg Ser Ser Pro Val Val Ile Asp Ala Ser
                170
                                    175
Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr
                185
                                    190
Pro Asn Ser Leu Leu Val Ser Trp Gln Pro Pro Arg Ala Arg Ile
                200
                                    205
Thr Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly Ser Pro Pro Arg
                215
                                    220
Glu Val Val Pro Arg Pro Arg Pro Gly Val Thr Glu Ala Thr Ile
Thr Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile Tyr Val Ile Ala
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                245
Leu Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile Gly Arg Lys
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Thr Ser Leu Ser Ala Gln Trp Thr Pro Pro Asn Val Gln Leu Thr
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Gly Tyr Arg Val Arg Val Thr Pro Lys Glu Lys Thr Gly Pro Met
                 35
                                     40
Lys Glu Ile Asn Leu Ala Pro Asp Ser Ser Ser Val Val Val Ser
                 50
                                     55
Gly Leu Met Val Ala Thr Lys Tyr Glu Val Ser Val Tyr Ala Leu
                 65
                                     70
Lys Asp Thr Leu Thr Ser Arg Pro Ala Gln Gly Val Val Thr Thr
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Leu Glu Asn Val Ser Pro Pro Arg Arg Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp Arg Thr Lys Thr Glu Thr 110 115 Ile Thr Gly Phe Gln Val Asp Ala Val Pro Ala Asn Gly Gln Thr 125 130 Pro Ile Gln Arg Thr Ile Lys Pro Asp Val Arg Ser Tyr Thr Ile 140 145 Thr Gly Leu Gln Pro Gly Thr Asp Tyr Lys Ile Tyr Leu Tyr Thr 155 160 Leu Asn Asp Asn Ala Arg Ser Ser Pro Val Val Ile Asp Ala Ser 170 Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr 185 190 195 Pro Asn Ser Leu Leu Val Ser Trp Gln Pro Pro Arg Ala Arg Ile 200 205 210 Thr Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly Ser Pro Pro Arg 215 220 Glu Val Val Pro Arg Pro Arg Pro Gly Val Thr Glu Ala Thr Ile 230 235 Thr Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile Tyr Val Ile Ala 245 250 Leu Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile Gly Arg Lys 260 265 Thr Asp Glu Leu Pro Gln Leu Val Thr Leu Pro His Pro Asn Leu 275 280 285 His Gly Pro Glu Ile Leu Asp Val Pro Ser Thr 290 <210> 11 <211> 549

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Arg	Val	Pro	His	Ser 140	Arg	Asn	Ser	Ile	Thr 145	Leu	Thr	Asn	Leu	Thr 150
Pro	Gly	Thr	Glu	Tyr 155	Val	Val	Ser	Ile		Ala	Leu	Asn	Gly	
Glu	Glu	Ser	Pro	Leu 170	Leu	Ile	Gly	Gln	Gln 175	Ser	Thr	Val	Ser	
Val	Pro	Arg	Asp	Leu 185	Glu	Val	Val	Ala	Ala 190	Thr	Pro	Thr	Ser	
Leu	Ile	Ser	Trp	Asp 200	Ala	Pro	Ala	Val	Thr 205	Val	Arg	Tyr	Tyr	Arg 210
Ile	Thr	Tyr	Gly	Glu 215	Thr	Gly	Gly	Asn	Ser 220	Pro	Val	Gln	Glu	Phe 225
Thr	Val	Pro	Gly	Ser 230	Lys	Ser	Thr	Ala	Thr 235	Ile	Ser	Gly	Leu	Lys 240
Pro	Gly	Val	Asp	Tyr 245	Thr	Ile	Thr	Val	Tyr 250	Ala	Val	Thr	Gly	Arg 255
Gly	Asp	Ser	Pro	Ala 260	Ser	Ser	Lys	Pro	Ile 265	Ser	Ile	Asn	Tyr	Arg 270
				Lys 275					280					285
Leu	Lys	Phe	Thr	Gln 290	Val	Thr	Pro	Thr	Ser 295	Leu	Ser	Ala	Gln	Trp 300
				Val 305				_	310			_		315
				Thr 320					325					330
				Val 335					340					345
				Val 350					355					360
				Val 365					370					375
	_			380	Thr				385					11e 390
				Lys 395					400					405
				Asn 410	_				415					420
				Ser 425					430				_	435
				Tyr 440					445					450
				Ile 455					460					465
				Leu 470					475					480
				Arg 485					490				_	495
				Ser 500					505					510
				Glu 515					520					525
				Tyr 530					Lys 535	ASN	ASN	GIN	гуѕ	Ser 540
JIU	110	n∉u	116	Gly 545	ALG	гуз	тÀд	1111						

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Tyr Glu Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg

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                380
                                    385
Ser Trp Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp
                395
                                    400
Ala Val Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys
                410
                                    415
Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr
                                    430
                425
Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser
                                    445
Ser Pro Val Val Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro Ser
Asn Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser
                470
                                    475
Trp Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr
                485
                                    490
Glu Lys Pro Gly Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg
                500
                                    505
                                                         510
Pro Gly Val Thr Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr
                515
                                    520
Glu Tyr Thr Ile Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser
                530
                                    535
Glu Pro Leu Ile Gly Arg Lys Lys Thr Asp Glu Leu Pro Gln Leu
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                                    550
Val Thr Leu Pro His Pro Asn Leu His Gly Pro Glu Ile Leu Asp
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Val Pro Ser Thr
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Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu
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Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln
                 65
                                     70
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp
                 80
                                     85
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe
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                                    100
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg
                110
                                    115
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Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp
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Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr
                140
                                     145
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg
                155
                                     160
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp
                170
                                     175
                                                         180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu
                185
                                     190
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg
                200
                                     205
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe
                215
                                     220
                                                         225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys
                                                         240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg
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Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg
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                                     265
                                                         270
Thr Glu Ile Asp Lys Pro Ser Asp Glu Leu Pro Gln Leu Val Thr
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Ser Thr
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<220>

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Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp 170 170 170 170 175 180 Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu 185 Leu Ile Ser Trp Asp Ala Pro Ala Val Thr 200 205 205 215 207 216 Thr Tyr Gly Glu Thr Gly Gly Asn Ser 220 222 Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys 230 230 230 235 Pro Gly Val Asp Tyr 245 Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Gly Leu Lys 266 Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg 267 Thr Glu Ile Asp Lys 275 Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp 290 Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val Arg Ser Tyr Thr Ile Thr Gly Phe Gln Val Asp Ala Val Arg Ser Tyr Thr Ile Thr Gly Phe Gln Val Asp Ala 305 Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp 320 Val Arg Ser Tyr Thr Leu Asn Asp Asn Ala Arg Ser Ser Pro 235 Val Val Ile Asp Ala Ser Thr 365 **C210> 15 <*C210> 15 <*C211> 368 <*C212> PRT **C213> Artificial Sequence** **C220> C220> C220 **C220> C250 **C200> C250 **C200> C250 **C200> C250 **C200> C250 **C200> C250	Glu Glu Ser		155					160					165
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Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg 200	Val Pro Arg	Asp		Glu	Val	Val	Ala		Thr	Pro	Thr	Ser	
The Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe 215	Leu Ile Ser	Trp		Ala	Pro	Ala	Val	Thr	Val	Arg	Tyr	Tyr	Arg
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys 230 235 240 Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg 245 250 265 Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg 260 265 Thr Glu Ile Asp Lys Pro Ser Met Asn Val Ser Pro Pro Arg Arg 275 280 Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Tro 290 295 300 Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val 355 Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp 320 325 Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr Asp Tyr 335 340 Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser Ser Pro 360 Val Val Ile Asp Ala Ser Thr 365 **2210> 15 **2211> 368 **2220> **223> fibronectin fragment named CHV-90** **400> 15 Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro Asp Thr Met Arg 1 5 10 15 Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu 50 35 Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu 50 50 55 Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln Fro Gly Thr Asp Leu 60 Fro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln 75 His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp 80 Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 95 100 Fro Thr Val His Trp Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 100 Fro Thr Val His Trp Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 100 Fro Thr Val His Trp Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 100 Fro Thr Val His Trp Ile Asp Phe Ser Asp Ile Thr Ile Thr Ala Asn Ser Phe 100 Fro Thr Val His Trp Ile Asp Phe Ser Asp Ile Thr Ile Thr Ala Asn Ser Phe 100 Fro Thr Val His Trp Ile Asp Phe Ser Asp Ile Thr Ile Thr Ala Asn Ser Phe 100	Ile Thr Tyr	Gly	Glu	Thr	Gly	Gly	Asn	Ser	Pro	Val	Gln	Glu	Phe
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg	Thr Val Pro	Gly	Ser	Lys	Ser	Thr	Ala	Thr	Ile	Ser	Gly	Leu	Lys
Carrell	Pro Gly Val	Asp	Tyr	Thr	Ile	Thr	Val	Tyr	Ala	Val	Thr	Gly	Arg
Thr Glu Ile Asp Lys Pro Ser Met Asn Val Ser Pro Pro Arg Arg 275	Gly Asp Ser	Pro	Ala	Ser	Ser	Lys	Pro	Ile	Ser	Ile	Asn	Tyr	Arg
Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp	Thr Glu Ile	Asp	Lys	Pro	Ser	Met	Asn	Val	Ser	Pro	Pro	Arg	Arg
Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val 305	Ala Arg Val	Thr	Asp	Ala	Thr	Glu	Thr	Thr	Ile	Thr	Ile	Ser	Trp
Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp 320	Arg Thr Lys	Thr	Glu	Thr	Ile	Thr	Gly	Phe	Gln	Val	Asp	Ala	Val
Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr Asp Tyr 335	Pro Ala Asn	Gly		Thr	Pro	Ile	Gln		Thr	Ile	Lvs	Pro	
Sample S			320					325			_		330
Val Val Ile Asp Ala Ser Thr 365 <pre></pre>	val Arg Ser	Tyr		11e	Thr	GLY	Leu		Pro	GIY	Thr	Asp	
Val Val Ile Asp Ala Ser Thr	Lys Ile Tyr	Leu		Thr	Leu	Asn	Asp		Ala	Arg	Ser	Ser	
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Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu Asp Val Leu Ala Glu Leu Tyr Asp Asp Asp Ala Val Val Leu Tyr Asp Leu Asp Asp Asp Asp Asp Asp Val Ser Ser Val Tyr Glu Gln Gln Lys Thr Gly Leu Asp A	<220> <223> fibros	necti	ln fr	agme	ent r				Dwo	7	mh	Mak	D. e. c.
Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu Ala Glu Leu Leu Thr Asn Leu Leu Ala Leu Ala Rei Ser Val Tyr Glu Gln Ser Val Tyr Glu Gln Leu Asp Asp Ala Rei Ser Val Tyr Glu Gln Lys Thr Gly Leu Asp A	<220> <223> fibroi <400> 15 Pro Thr Asp	necti	ln fr Arg	agme	ent r			Gly	Pro	Asp	Thr	Met	
Ser Ile Ser Pro Ser Asp Asp Asn Ala Val Val Leu Thr Asn Leu Leu 50 55 55 60 Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln 65 70 75 His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp 85 90 Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 95 Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg 110 115	<220> <223> fibron <400> 15 Pro Thr Asp 1	necti Leu	n fr Arg 5 Pro	agme	ent r Thr	Asn	Ile	Gly 10 Asp					15 Leu
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln 65 70 70 75 His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp 85 90 Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 100 105 Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg 110 120	<220> <223> fibron <400> 15 Pro Thr Asp 1 Val Thr Trp	necti Leu Ala	Arg 5 Pro 20 Pro	Phe	ent r Thr Pro	Asn Ser	Ile Ile	Gly 10 Asp 25 Glu	Leu	Thr	Asn	Phe	15 Leu 30 Leu
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp 80 85 90 Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 100 105 Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg 110 120	<220> <223> fibron <400> 15 Pro Thr Asp 1 Val Thr Trp Val Arg Tyr	Leu Ala Ser	Arg 5 Pro 20 Pro 35 Ser	Phe Pro Val	ent r Thr Pro Lys	Asn Ser Asn	Ile Ile Glu	Gly 10 Asp 25 Glu 40 Val	Leu Asp	Thr Val	Asn Ala	Phe Glu	15 Leu 30 Leu 45 Leu
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 95 100 105 Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg 110 115 120	<220> <223> fibron <400> 15 Pro Thr Asp 1 Val Thr Trp Val Arg Tyr Ser Ile Ser	Leu Ala Ser Pro	Arg 5 Pro 20 Pro 35 Ser 50 Tyr	Phe Pro Val Asp	Thr Pro Lys Asn	Asn Ser Asn Ala	Ile Ile Glu Val	Gly 10 Asp 25 Glu 40 Val 55 Ser	Leu Asp Leu	Thr Val Thr	Asn Ala Asn	Phe Glu Leu	15 Leu 30 Leu 45 Leu 60 Gln
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg 110 115 120	<220> <223> fibron <400> 15 Pro Thr Asp 1 Val Thr Trp Val Arg Tyr Ser Ile Ser Pro Gly Thr	Leu Ala Ser Pro Glu	Arg 5 Pro 20 Pro 35 Ser 50 Tyr 65 Pro	Phe Pro Val Asp	Thr Pro Lys Asn Val	Asn Ser Asn Ala Ser	Ile Ile Glu Val	Gly 10 Asp 25 Glu 40 Val 55 Ser 70 Gln	Leu Asp Leu Ser	Thr Val Thr Val	Asn Ala Asn Tyr	Phe Glu Leu Glu	15 Leu 30 Leu 45 Leu 60 Gln 75 Asp
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	<220> <223> fibron <400> 15 Pro Thr Asp	Leu Ala Ser Pro Glu Thr	Arg 5 Pro 20 Pro 35 Ser 50 Tyr 65 Pro 80 Ile 95 Ile	Phe Pro Val Asp Val Leu Asp	Thr Pro Lys Asn Val Arg	Asn Ser Asn Ala Ser Gly Ser	Ile Ile Glu Val Val Arg Asp	Gly 10 Asp 25 Glu 40 Val 55 Ser 70 Gln 85 Ile 100 Thr	Leu Asp Leu Ser Lys Thr	Thr Val Thr Val Thr Ala	Asn Ala Asn Tyr Gly Asn	Phe Glu Leu Glu Leu Ser	15 Leu 30 Leu 45 Leu 60 Gln 75 Asp 90 Phe 105 Arg

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125
                                     130
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr
                140
                                     145
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg
                155
                                    160
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp
                170
                                     175
                                                         180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu
                185
                                     190
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg
                200
                                     205
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe
                215
                                     220
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys
                                                         240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg
                                     250
                245
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg
                260
                                     265
Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Asp Ala Pro Ser Asn
                275
                                     280
Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser Trp
                290
                                     295
Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr Glu
                305
                                     310
Lys Pro Gly Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg Pro
                320
                                     325
                                                         330
Gly Val Thr Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr Glu
Tyr Thr Ile Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser Glu
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                                                         360
Pro Leu Ile Gly Arg Lys Lys Thr
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<212> PRT

<213> Artificial Sequence

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<223> fibronectin fragment named CHV-92

<400> 16

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Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp
                125
                                    130
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr
                140
                                    145
                                                         150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg
                155
                                    160
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp
                170
                                    175
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu
                185
                                    190
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg
                200
                                     205
                                                         210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe
                215
                                    220
                                                         225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys
                230
                                    235
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg
                245
                                    250
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg
                260
                                    265
Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Pro Ala Pro Thr Asp
                275
                                    280
Leu Lys Phe Thr Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp
                290
                                     295
                                                         300
Thr Pro Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr
                                                         315
Pro Lys Glu Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro
                320
                                     325
Asp Ser Ser Val Val Val Ser Gly Leu Met Val Ala Thr Lys
                335
                                     340
Tyr Glu Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg
                350
                                     355
                                                         360
Pro Ala Gln Gly Val Val Thr Thr Leu Glu
                365
<210> 17
<211> 457
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<213> Artificial Sequence
<220>
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Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr Asn Phe Leu
                 20
Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu
                 35
                                      40
Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu
                 50
                                      55
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln
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Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg

His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arq Thr Glu Ile Asp Lys Pro Ser Met Asn Val Ser Pro Pro Arg Arg Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser Ser Pro Val Val Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser Trp Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg Pro Gly Val Thr Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile Gly Arg Lys Lys Thr

<210> 18 <211> 459

<212> PRT <213> Artificial Sequence <220> <223> fibronectin fragment named CHV-181 Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro Asp Thr Met Arg 10 Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr Asn Phe Leu 20 25 Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln 65 His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp 80 Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe 95 100 Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg 110 115 Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp 125 130 Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr 145 Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp 170 175 Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu 185 190 Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg 200 205 Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe 215 220 Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys 230 235 Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arq 245 250 Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg 260 265 Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Pro Ala Pro Thr Asp 280 285 Leu Lys Phe Thr Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp 290 295 300 Thr Pro Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr 305 310 Pro Lys Glu Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro 320 325 Asp Ser Ser Ser Val Val Ser Gly Leu Met Val Ala Thr Lys

340

355

370

375

Tyr Glu Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg

Pro Ala Gln Gly Val Val Thr Thr Leu Glu Asn Val Ser Pro Pro

335

350

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Arg Arg Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile
                                     385
Ser Trp Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp
                395
                                     400
Ala Val Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys
                410
                                    415
Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr
                425
                                    430
                                                         435
Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser
                440
                                    445
Ser Pro Val Val Ile Asp Ala Ser Thr
                455
<210> 19
<211> 276
<212> PRT
<213> Artificial Sequence
<220>
<223> fibronectin fragment named H-275-Cys
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Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp Thr Pro Pro Asn
                 20
                                     25
Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr Pro Lys Glu Lys
                                     40
Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro Asp Ser Ser Ser
Val Val Val Ser Gly Leu Met Val Ala Thr Lys Tyr Glu Val Ser
                 65
                                     70
Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg Pro Ala Gln Gly
                                     85
Val Val Thr Thr Leu Glu Asn Val Ser Pro Pro Arg Arg Ala Arg
                 95
                                    100
Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp Arg Thr
                110
                                    115
                                                         120
Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val Pro Ala
                125
                                    130
Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp Val Arg
                140
                                    145
Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr Asp Tyr Lys Ile
                155
                                    160
Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser Ser Pro Val Val
                                    175
                                                         180
Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe
                185
                                    190
Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser Trp Gln Pro Pro
                200
                                    205
Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly
                215
                                    220
Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg Pro Gly Val Thr
                230
                                    235
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Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile

250

Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile 260 265 Gly Arg Lys Lys Thr Cys 275 <210> 20 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> synthetic PCR primer 12S <400> 20 aaaccatggc agctagcgct attcctgcac caactgac 38 <210> 21 <211> 36 <212> DNA <213> Artificial Sequence <223> synthetic PCR primer 14A <400> 21 aaaggatccc taactagtct ttttccttcc aatcag 36 <210> 22 <211> 40 <212> DNA <213> Artificial Sequence <220> <223> synthetic PCR primer Cys-A <400> 22 aaaagcggcc gctagcgcaa gccatggtct gtttcctgtg 40 <210> 23 <211> 41 <212> DNA

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<400> 23 aaaagcggcc gcactagtgc atagggatcc ggctgagcaa c 41

<210> 24 <211> 9 <212> PRT <213> Artificial Sequence

<220>

<223> Designed peptide based on matrixprotein derived from influenza virus

<400> 24

Gly Ile Leu Gly Phe Val Phe Thr Leu
1 5